=> SET COST OFF
SET COMMAND COMPLETED

=> FILE REG
FILE 'REGISTRY' ENTERED AT 15:33:38 ON 05 MAY 2006

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 4 MAY 2006 HIGHEST RN 882974-03-0
DICTIONARY FILE UPDATES: 4 MAY 2006 HIGHEST RN 882974-03-0

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

****
* *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
* *
****

Structure search iteration limits have been increased. See HELP SLIMITS for details.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

=> FILE HCAPLU
FILE 'HCAPLUS' ENTERED AT 15:33:43 ON 05 MAY 2006

FILE COVERS 1907 - 5 May 2006 VOL 144 ISS 20
FILE LAST UPDATED: 4 May 2006 (20060504/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

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=> D QUE
L2            5 SEA FILE=REGISTRY ABB=ON  (111706-40-2/BI OR 14283-07-9/BI OR
                  25322-68-3/BI OR 96-48-0/BI OR 96-49-1/BI)
L3            1 SEA FILE=REGISTRY ABB=ON  L2 AND BUTYROLACTONE
L4            1 SEA FILE=REGISTRY ABB=ON  L2 AND PMS/CI
L5         9152 SEA FILE=HCAPLUS ABB=ON  L3
L6        89315 SEA FILE=HCAPLUS ABB=ON  L4
L8         1668 SEA FILE=HCAPLUS ABB=ON  L5(L)ELECTROLYT?
L9         2860 SEA FILE=HCAPLUS ABB=ON  L6(L)ELECTROLYT?
L10         112 SEA FILE=HCAPLUS ABB=ON  L8 AND L9
L11          80 SEA FILE=HCAPLUS ABB=ON  L10 AND ELECTROCHEMICAL/SC
L12           3 SEA FILE=HCAPLUS ABB=ON  L11 AND VISCOS?
L13          20 SEA FILE=HCAPLUS ABB=ON  L11 AND (NONAQ? OR NON(W)AQUEOUS?)
L14          22 SEA FILE=HCAPLUS ABB=ON  L12 OR L13
L16           5 SEA FILE=HCAPLUS ABB=ON  L10 AND VISCOS?
L17          24 SEA FILE=HCAPLUS ABB=ON  L14 OR L16
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=> D L17 1-24 BIB ABS IND HITSTR
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L17 ANSWER 1 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2006:13801 HCAPLUS
DN 144:111262
TI Electrolyte for lithium secondary battery
IN Jung, Cheol-Soo; Choi, Bo-Geum; Song, Eui-Hwan
PA S. Korea
SO U.S. Pat. Appl. Publ., 13 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2006003232	A1	20060105	US 2005-174075	20050630
	JP 2006019274	A2	20060119	JP 2005-183932	20050623
PRAI	KR 2004-50905	A	20040630		
	KR 2004-50906	A	20040630		
	KR 2004-50907	A	20040630		

OS MARPAT 144:111262
AB An electrolyte for a lithium secondary battery is provided. The electrolyte improves battery safety, high temperature storage characteristics, and electrochem. properties of lithium batteries. The electrolyte comprises at least one lithium salt and a **non-aqueous** organic solvent comprising a cyclic carbonate and a lactone-based compound The lactone based compound comprises substituents selected from the group consisting of alkyl groups, alkenyl groups, alkynyl groups, aryl groups, and combinations thereof. A lithium battery is also provided, which comprises a neg. electrode capable of intercalating/deintercalating lithium, a pos. electrode capable of intercalating/deintercalating lithium, and an inventive electrolyte.
INCL 429330000; 429231950; 429231100; 429231300; 429224000; 429223000; 429231800; 429217000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

ST electrolyte lithium secondary battery; safety electrolyte lithium secondary battery

IT Alkenes, uses
RL: MOA (Modifier or additive use); USES (Uses)
(C2-8, copolymers with propylene; electrolyte for lithium secondary battery)

IT Synthetic rubber, uses
RL: MOA (Modifier or additive use); USES (Uses)
(acrylic-butadiene; electrolyte for lithium secondary battery)

IT Styrene-butadiene rubber, uses
RL: MOA (Modifier or additive use); USES (Uses)
(carboxy-containing; electrolyte for lithium secondary battery)

IT Battery electrolytes
(electrolyte for lithium secondary battery)

IT Carbonaceous materials (technological products)
Fullerenes
Lactones
RL: DEV (Device component use); USES (Uses)
(electrolyte for lithium secondary battery)

IT Carbon black, uses
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte for lithium secondary battery)

IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte for lithium secondary battery)

IT Nitrile rubber, uses
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte for lithium secondary battery)

IT Polyoxyalkylenes, uses
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte for lithium secondary battery)

IT Styrene-butadiene rubber, uses
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte for lithium secondary battery)

IT Ethers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fluoroalkyl; electrolyte for lithium secondary battery)

IT Carbon fibers, uses
RL: DEV (Device component use); USES (Uses)
(graphite; electrolyte for lithium secondary battery)

IT Secondary batteries
(lithium; electrolyte for lithium secondary battery)

IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 463-79-6D, Carbonic acid, cyclic esters 872-36-6, Vinylene carbonate 4437-85-8, Butylenecarbonate 7439-93-2D, Lithium, intercalation compds. 7439-93-2D, Lithium, salts 7447-41-8, Lithium chloride, uses 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate 10377-51-2, Lithium iodide 14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithiumtriflate 37220-89-6, Aluminum lithium oxide 90076-65-6 99685-96-8, Fullerene 131651-65-5, Lithium nonafluorobutanesulfonate
RL: DEV (Device component use); USES (Uses)
(electrolyte for lithium secondary battery)

IT 57-57-8, β-Propiolactone 68-12-2, DMF, uses 75-05-8, Acetonitrile, uses 79-41-4D, Methacrylic acid, copolymer with alkyl methacrylate 96-47-9, 2-Methyltetrahydrofuran **96-48-0**, γ-Butyrolactone 104-50-7, γ-Octanolactone 104-61-0,

γ-Nonalactone 105-21-5, γ-Heptanolactone 105-58-8, Diethyl carbonate 108-29-2, γ-Valerolactone 109-99-9, THF, uses 110-71-4, 1,2-Dimethoxyethane 115-07-1D, Propylene, copolymers with C2-8 olefins 123-91-1, 1,4-Dioxane, uses 502-44-3, ε-Caprolactone 542-28-9, δ-Valerolactone 554-12-1, Methyl propionate 616-38-6, Dimethyl carbonate 623-53-0, Ethylmethyl carbonate 623-96-1, Dipropyl carbonate 629-14-1, 1,2-Diethoxyethane 695-06-7, γ-Caprolactone 698-76-0, δ-Octanolactone 705-86-2, δ-Decanolactone 706-14-9, γ-Decanolactone 713-95-1, δ-Dodecanolactone 823-22-3, δ-Caprolactone 1000-28-8 3068-88-0, β-Butyrolactone 3301-90-4, δ-Heptanolactone 3301-94-8, δ-Nonalactone 3967-54-2, Chloroethylene carbonate 3967-55-3 9000-11-7D, CMC, alkali metal salts 9002-89-5, Polyvinyl alcohol 9002-98-6 9003-01-4, Polyacrylic acid 9003-04-7, Sodium polyacrylate 9003-05-8, Polyacrylamide 9003-39-8, Polyvinylpyrrolidone 9004-34-6D, Cellulose, compds. 9004-65-3D, Hydroxypropylmethyl cellulose, alkali metal salts 9004-67-5D, Methyl cellulose, alkali metal salts 9005-82-7, Amylose 11104-61-3, Cobalt oxide 13463-67-7, Titanium oxide, uses 16627-68-2 16627-71-7 24937-79-9, PVDF 25087-26-7, Polymethacrylic acid 25189-55-3, Poly-N-isopropylacrylamide **25322-68-3**, PEO 26101-52-0, Polyvinylsulfonic acid 26570-48-9, Polyethylene glycol diacrylate 26590-05-6, Acrylamide-diallyldimethyl ammonium chloride copolymer 26793-34-0, Poly-N,N-dimethylacrylamide 29695-83-8 29756-70-5 30413-33-3, DiBromoethylene carbonate 31851-82-8 35363-40-7, Ethylpropyl carbonate 56525-42-9, Methylpropyl carbonate 65064-78-0 65064-81-5 85771-75-1 114435-02-8, Fluoroethylene carbonate 114705-56-5 171730-81-7 215650-15-0 827300-14-1 827300-17-4 872584-19-5 872584-20-8 872584-21-9 872586-49-7 872586-50-0 872586-51-1 872586-52-2 872586-53-3 872586-54-4 872586-56-6 872586-58-8 872586-60-2 872586-62-4 872586-63-5 872586-64-6 872586-65-7
RL: MOA (Modifier or additive use); USES (Uses)
(**electrolyte** for lithium secondary battery)

IT 7440-44-0, Carbon, uses
RL: DEV (Device component use); USES (Uses)
(graphitized mesocarbon microbeads; electrolyte for lithium secondary battery)

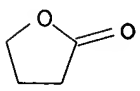
IT 9003-18-3
RL: MOA (Modifier or additive use); USES (Uses)
(nitrile rubber; electrolyte for lithium secondary battery)

IT 7440-02-0, Nickel, uses
RL: MOA (Modifier or additive use); USES (Uses)
(powder; electrolyte for lithium secondary battery)

IT 9003-55-8 9003-55-8D, carboxy-containing
RL: MOA (Modifier or additive use); USES (Uses)
(styrene-butadiene rubber; electrolyte for lithium secondary battery)

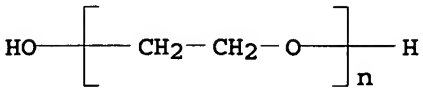
IT **96-48-0**, γ-Butyrolactone **25322-68-3**, PEO
RL: MOA (Modifier or additive use); USES (Uses)
(**electrolyte** for lithium secondary battery)

RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX

NAME)



L17 ANSWER 2 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:964673 HCAPLUS
DN 141:398264
TI Method for preparation of chemically crosslinked polyacrylonitrile polymer electrolyte as separator for secondary battery
IN Chen, Show-An; Xue, Uan-Jie; Lee, Jen-Jeh; Wang, Po-Shen
PA Taiwan
SO U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

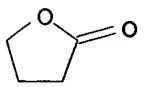
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2004224233	A1	20041111	US 2003-428789	20030505
PRAI US 2003-428789		20030505		

AB A composite gel-type polymer electrolyte membrane, as a separator between the pos. and the neg. electrode for secondary battery, consists of crosslinked gel-type polyacrylonitrile (PAN) electrolytes, polyvinylidene fluoride (PVDF) polymers and liquid electrolytes. The crosslinked gel-type PAN electrolytes are copolymd. by acrylonitrile (AN) monomers and crosslinked monomers with two terminal acrylic acid ester function groups. The PVdF can be PVdF-co-HFP polymers containing over 80% PVdF. The liquid electrolytes are made from using **nonaq.** solvents to dissolve alkaline or alkaline earth metallic salts. This invention has advantages of superior ionic conductivities and mech. strength at high temperature, fine compatible to pos. and neg. electrodes and potential to be industrialized.

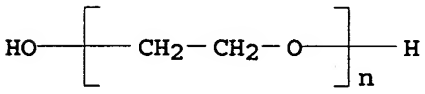
IC ICM H01M010-40
ICS H01M004-58; H01M004-60; H01M004-40
INCL 429303000; 429314000; 429316000; 429317000; 429307000; 429213000; 429231950; 429231400
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST polyacrylonitrile electrolyte separator secondary battery
IT Secondary batteries
(lithium; method for preparation of chemical crosslinked polyacrylonitrile electrolyte as separator for secondary battery)
IT Adhesion, physical
Battery electrolytes
Conducting polymers
Ionic conductivity
Secondary battery separators
Swelling, physical
(method for preparation of chemical crosslinked polyacrylonitrile electrolyte as separator for secondary battery)
IT Alkali metal salts
Alkaline earth salts
Amides, uses
Esters, uses

Fluoropolymers, uses
Lactones
RL: DEV (Device component use); USES (Uses)
(method for preparation of chemical crosslinked polyacrylonitrile electrolyte
as separator for secondary battery)
IT Polyoxyalkylenes, uses
RL: MOA (Modifier or additive use); USES (Uses)
(method for preparation of chemical crosslinked polyacrylonitrile electrolyte
as separator for secondary battery)
IT Polysulfides
RL: DEV (Device component use); USES (Uses)
(organic; method for preparation of chemical crosslinked polyacrylonitrile electrolyte as separator for secondary battery)
IT Fillers
(porous; method for preparation of chemical crosslinked polyacrylonitrile electrolyte as separator for secondary battery)
IT Lithium alloy, base
RL: DEV (Device component use); USES (Uses)
(method for preparation of chemical crosslinked polyacrylonitrile electrolyte
as separator for secondary battery)
IT 67-64-1, Acetone, uses 67-68-5, Dmso, uses 68-12-2, Dmf, uses
96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate
105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 110-71-4
463-79-6D, Carbonic acid, ester, acyclic 463-79-6D, Carbonic acid, ester, cyclic 556-65-0, Lithium thiocyanate 616-38-6, Dimethyl carbonate 872-50-4, n-Methylpyrrolidone, uses 7439-93-2, Lithium, uses
7440-44-0, Carbon, uses 7447-41-8, Lithium chloride (LiCl), uses
7550-35-8, Lithium bromide (LiBr) 7704-34-9D, Sulfur, organic compds., polymers 7791-03-9, Lithium perchlorate 9011-17-0,
Hexafluoropropylene-vinylidene fluoride copolymer 10377-51-2, Lithium iodide 10411-26-4, Butyl carbonate 12031-65-1, Lithium nickel oxide (LiNiO2) 12057-17-9, Lithium manganese oxide (LiMn2O4) 12162-79-7, Lithium manganese oxide limno2 12190-79-3, Cobalt lithium oxide (CoLiO2)
14024-11-4, Lithium tetrachloroaluminate 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 21324-40-3, Lithium hexafluorophosphate 24937-79-9, Pvdf 29935-35-1, Lithium hexafluoroarsenate 30604-81-0, Polypyrrole 33454-82-9, Lithium triflate 39448-96-9, Graphite lithium 90076-65-6 132404-42-3
132843-44-8 210406-60-3
RL: DEV (Device component use); USES (Uses)
(method for preparation of chemical crosslinked polyacrylonitrile **electrolyte** as separator for secondary battery)
IT 25014-41-9P, Polyacrylonitrile
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(method for preparation of chemical crosslinked polyacrylonitrile electrolyte
as separator for secondary battery)
IT **25322-68-3**, Peo
RL: MOA (Modifier or additive use); USES (Uses)
(method for preparation of chemical crosslinked polyacrylonitrile **electrolyte** as separator for secondary battery)
IT **96-48-0**, γ-Butyrolactone
RL: DEV (Device component use); USES (Uses)
(method for preparation of chemical crosslinked polyacrylonitrile **electrolyte** as separator for secondary battery)
RN 96-48-0 HCAPLUS

CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



IT **25322-68-3**, Peo
RL: MOA (Modifier or additive use); USES (Uses)
(method for preparation of chemical crosslinked polyacrylonitrile **electrolyte** as separator for secondary battery)
RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



L17 ANSWER 3 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:412653 HCAPLUS
DN 140:409655
TI **Nonaqueous** electrolytic solution for lithium battery
IN Kim, Ju-Yup; Cho, Myung-Dong; Ryu, Young-Gyoon
PA Samsung SDI Co., Ltd., S. Korea
SO U.S. Pat. Appl. Publ., 12 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004096750	A1	20040520	US 2003-669464	20030925
	CN 1501541	A	20040602	CN 2003-158727	20030922
	JP 2004172120	A2	20040617	JP 2003-385057	20031114
PRAI	KR 2002-71397	A	20021116		

OS MARPAT 140:409655
AB A **nonaq.** electrolytic solution and a lithium battery employing the same are provided. The **nonaq.** electrolyte solution that contains a substituted or unsubstituted acetate can effectively stabilize lithium metal and improve the conductivity of lithium ions.
IC ICM H01M010-40
ICS H01M004-58; H01M004-48; H01M004-40
INCL 429326000; 429332000; 429218100; 429231950; 429231100
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST lithium battery **nonaq** electrolytic soln
IT Secondary batteries
(lithium; **nonaq.** electrolytic solution for lithium battery)
IT Battery electrolytes
(**nonaq.** electrolytic solution for lithium battery)
IT Carbon black, uses
Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(**nonaq.** electrolytic solution for lithium battery)
IT Lithium alloy, base

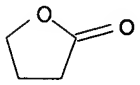
RL: DEV (Device component use); USES (Uses)
(**nonaq.** electrolytic solution for lithium battery)

IT 71-43-2D, Benzene, organic solvents containing monofluoro derivs. **96-48-0**, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 110-71-4 111-96-6, Diethyleneglycol dimethyl ether 112-36-7, Diethyleneglycol diethyl ether 112-49-2, Triethyleneglycol dimethyl ether 463-79-6D, Carbonic acid, ester 616-38-6, Dimethyl carbonate 646-06-0, 1,3-Dioxolane 872-36-6, Vinylene carbonate 1072-47-5, 4-Methyl-1,3-dioxolane 1072-57-7 4499-99-4, Triethyleneglycol diethyl ether 7439-93-2, Lithium, uses 7440-44-0D, Carbon, sulfur compound, polymer 7704-34-9, Sulfur, uses 7704-34-9D, Sulfur, carbon compound, polymer 12137-46-1, Kasolite 21324-40-3, Lithium hexafluorophosphate **25322-68-3**, Peo 29921-38-8, 4-Ethyl-1,3-dioxolane 31371-55-8, Ethane, 1,2-dimethoxy-, homopolymer 73506-93-1, Diethoxyethane 74432-42-1, Lithium polysulfide 183140-14-9, 1,3-Dioxetan-2-one 676610-04-1
RL: DEV (Device component use); USES (Uses)
(**nonaq. electrolytic** solution for lithium battery)

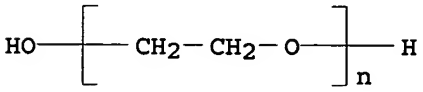
IT 105-37-3 105-53-3, Diethyl malonate 105-54-4 106-70-7 108-59-8, Dimethyl malonate 109-21-7 123-66-0 554-12-1 590-01-2 623-42-7 626-82-4 1190-39-2, DiButyl malonate 6186-89-6, Ethylmethyl malonate 17373-84-1, Butylethyl malonate 79546-83-1, Butylmethyl malonate 90076-65-6
RL: MOA (Modifier or additive use); USES (Uses)
(**nonaq.** electrolytic solution for lithium battery)

IT **96-48-0**, γ-Butyrolactone **25322-68-3**, Peo
RL: DEV (Device component use); USES (Uses)
(**nonaq. electrolytic** solution for lithium battery)

RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



L17 ANSWER 4 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:818002 HCAPLUS
DN 139:326050
TI **Nonaqueous** electrolytes based on alkali metal salts of N,N'-disubstituted amides of alkane iminosulfinic acid for electrochemical cells
IN Shembel, Elena; Koval, Ivan V.; Oliynik, Tat'yna G.; Chervakov, Oleg V.; Novak, Peter
PA Ener1 Battery Company, Ukraine
SO U.S. Pat. Appl. Publ., 14 pp.
CODEN: USXXCO
DT Patent

LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003194612	A1	20031016	US 2002-122788	20020415
	US 6858346	B2	20050222		
	WO 2003090297	A1	20031030	WO 2003-US11644	20030415
	WO 2003090297	C1	20041216		
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	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2003234107	A1	20031103	AU 2003-234107	20030415
	EP 1500155	A1	20050126	EP 2003-728413	20030415
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
PRAI	US 2002-122788	A	20020415		
	WO 2003-US11644	W	20030415		

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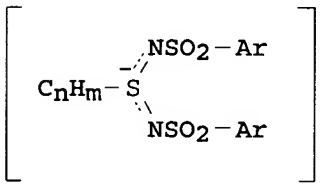


I

AB An organic salt having an alkali metal bound to a disubstituted amide of alkane iminosulfinic acid has the general formula (I), where Ar is an aromatic group, M is an alkali metal such as Li, K or Na, and CnHm is an alkane. The organic salt can be used to form **nonaq.** liquid and gel or plasticized polymer electrolytes. The electrolytes can be used to form improved lithium and lithium ion batteries.

IC ICM H01M010-40
INCL 429324000; 429339000; 429340000; 429337000; 429338000; 429326000; 429331000; 429332000; 429333000; 429303000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 23, 38
ST battery **nonaq** electrolyte alkane iminosulfinic acid amide; electrochem cell **nonaq** electrolyte alkane iminosulfinic acid amide
IT Polymer electrolytes
(gel or plasticized; **nonaq.** electrolytes based on alkali metal salts of N,N'-disubstituted amides of alkane iminosulfinic acid for electrochem. cells)
IT Polymers, uses
RL: DEV (Device component use); USES (Uses)
(halo; **nonaq.** electrolytes based on alkali metal salts of N,N'-disubstituted amides of alkane iminosulfinic acid for electrochem.

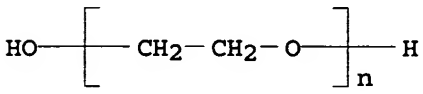
cells)
IT Transition metal oxides
RL: DEV (Device component use); USES (Uses)
(lithiated; **nonaq.** electrolytes based on alkali metal salts of N,N'-disubstituted amides of alkane iminosulfinic acid for electrochem. cells)
IT Secondary batteries
(lithium; **nonaq.** electrolytes based on alkali metal salts of N,N'-disubstituted amides of alkane iminosulfinic acid for electrochem. cells)
IT Battery electrolytes
(**nonaq.** electrolytes based on alkali metal salts of N,N'-disubstituted amides of alkane iminosulfinic acid for electrochem. cells)
IT Fluoropolymers, uses
Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(**nonaq.** electrolytes based on alkali metal salts of N,N'-disubstituted amides of alkane iminosulfinic acid for electrochem. cells)
IT 70-55-3 98-10-2, Benzenesulfonamide
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(**nonaq.** electrolytes based on alkali metal salts of N,N'-disubstituted amides of alkane iminosulfinic acid for electrochem. cells)
IT 1313-13-9, Manganese dioxide, uses 1314-62-1, Vanadium oxide (V2O5), uses 7439-93-2, LiThium, uses 7791-03-9, Lithium perchlorate 9002-86-2, Polyvinyl chloride 9002-86-2D, Polyvinyl chloride, chlorinated 9011-14-7, Pmma 12037-42-2, Vanadium oxide v6o13 12057-17-9, Lithium manganese oxide limn2o4 12798-95-7 14283-07-9, Lithium tetrafluoroborate 24937-79-9, Pvdf 25014-41-9, Polyacrylonitrile **25322-68-3**, Peo 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 66798-39-8 87871-75-8 90076-65-6 164383-74-8 164383-75-9
RL: DEV (Device component use); USES (Uses)
(**nonaq. electrolytes** based on alkali metal salts of N,N'-disubstituted amides of alkane iminosulfinic acid for electrochem. cells)
IT 613685-10-2P
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(**nonaq.** electrolytes based on alkali metal salts of N,N'-disubstituted amides of alkane iminosulfinic acid for electrochem. cells)
IT 613685-08-8P
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(**nonaq.** electrolytes based on alkali metal salts of N,N'-disubstituted amides of alkane iminosulfinic acid for electrochem. cells)
IT 7782-42-5, Graphite, uses 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer
RL: MOA (Modifier or additive use); USES (Uses)
(**nonaq.** electrolytes based on alkali metal salts of N,N'-disubstituted amides of alkane iminosulfinic acid for electrochem. cells)
IT 613685-09-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**nonaq.** electrolytes based on alkali metal salts of

N,N'-disubstituted amides of alkane iminosulfinic acid for electrochem. cells)

IT 67-68-5, Dmso, uses 68-12-2, Dmf, uses **96-48-0**, γ-Butyrolactone 96-49-1, Ethylene carbonate 107-13-1, Acrylonitrile, uses 108-32-7, Propylene carbonate 110-71-4 111-96-6, Diglyme 126-33-0, Sulfolane 127-19-5, Dimethyl acetamide 616-38-6, Dimethyl carbonate 646-06-0, 1,3-Dioxolane
RL: TEM (Technical or engineered material use); USES (Uses)
(**nonaq. electrolytes** based on alkali metal salts of N,N'-disubstituted amides of alkane iminosulfinic acid for electrochem. cells)

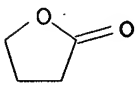
IT **25322-68-3**, Peo
RL: DEV (Device component use); USES (Uses)
(**nonaq. electrolytes** based on alkali metal salts of N,N'-disubstituted amides of alkane iminosulfinic acid for electrochem. cells)

RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



IT **96-48-0**, γ-Butyrolactone
RL: TEM (Technical or engineered material use); USES (Uses)
(**nonaq. electrolytes** based on alkali metal salts of N,N'-disubstituted amides of alkane iminosulfinic acid for electrochem. cells)

RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

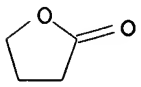
L17 ANSWER 5 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:794152 HCAPLUS
DN 139:310036
TI **Nonaqueous** electrolyte secondary battery
IN Ichihashi, Akira
PA Sanyo Electric Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003288938	A2	20031010	JP 2002-91090	20020328
PRAI JP 2002-91090		20020328		

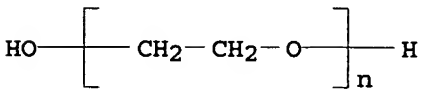
AB The secondary battery comprises a cathode and an anode which absorb and discharge Li+, **nonaq.** electrolyte containing **nonaq.**

solvent and electrolyte salts, and a separator between the electrodes. The electrolyte contains compds. having polyethylene glycol structure and fluorinated alkyl groups. The battery has excellent load characteristics.

IC ICM H01M010-40
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST **nonaq** electrolyte secondary battery polyethylene glycol structure
IT Alkanes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(fluoro; **nonaq.** electrolyte secondary battery)
IT Secondary batteries
(lithium; **nonaq.** electrolyte secondary battery)
IT Anodes
Cathodes
Electrolytes
(**nonaq.** electrolyte secondary battery)
IT Carbon black, uses
Fluoropolymers, uses
Polyoxyalkylenes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(**nonaq.** electrolyte secondary battery)
IT **96-48-0**, γ-Butyrolactone 872-50-4, N-Methyl-2-pyrrolidone, uses 21324-40-3, Lithium hexafluorophosphate 24937-79-9, Polyvinylidene fluoride **25322-68-3**, Polyethylene glycol
RL: NUU (Other use, unclassified); USES (Uses)
(**nonaq. electrolyte** secondary battery)
IT 12190-79-3, Lithium cobalt oxide (LiCoO2)
RL: RCT (Reactant); RACT (Reactant or reagent)
(**nonaq.** electrolyte secondary battery)
IT **96-48-0**, γ-Butyrolactone **25322-68-3**, Polyethylene glycol
RL: NUU (Other use, unclassified); USES (Uses)
(**nonaq. electrolyte** secondary battery)
RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)

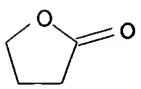


L17 ANSWER 6 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:531595 HCAPLUS
DN 139:103745
TI Secondary **nonaqueous** electrolyte battery
IN Kono, Tatsuoki; Takami, Norio
PA Toshiba Corp., Japan

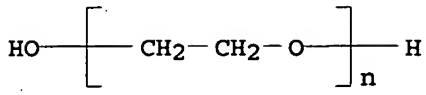
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003197257	A2	20030711	JP 2001-398106	20011227
PRAI	JP 2001-398106		20011227		

AB The battery has an electrode stack, containing a separator between a cathode and an anode, and an **nonaq.** electrolyte solution; where the battery satisfies K = M/D = 1.2+103-9.8+107 [D = distance between 2 electrodes; M = area (mm2) of battery height + width]; and the electrolyte solution is a non-Newtonian fluid.
IC ICM H01M010-40
ICS H01M002-02
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST secondary battery **nonaq** electrolyte nonnewtonian fluid
IT Carbonaceous materials (technological products)
RL: DEV (Device component use); USES (Uses)
(anode; structure of secondary **nonaq.** electrolyte batteries with controlled surface area and electrode distance)
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(electrolyte; structure of secondary **nonaq.** electrolyte batteries with controlled surface area and electrode distance)
IT 111706-40-2, Cobalt lithium oxide (CoLi0-1O2)
RL: DEV (Device component use); USES (Uses)
(cathode; structure of secondary **nonaq.** electrolyte batteries with controlled surface area and electrode distance)
IT **96-48-0**, γ-Butyrolactone 96-49-1, Ethylene carbonate 14283-07-9, Lithium tetrafluoroborate **25322-68-3**, Polyethylene oxide
RL: DEV (Device component use); USES (Uses)
(**electrolyte**; structure of secondary **nonaq.** **electrolyte** batteries with controlled surface area and electrode distance)
IT 9002-88-4, Polyethylene
RL: DEV (Device component use); USES (Uses)
(separator; structure of secondary **nonaq.** electrolyte batteries with controlled surface area and electrode distance)
IT **96-48-0**, γ-Butyrolactone **25322-68-3**, Polyethylene oxide
RL: DEV (Device component use); USES (Uses)
(**electrolyte**; structure of secondary **nonaq.** **electrolyte** batteries with controlled surface area and electrode distance)
RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



L17 ANSWER 7 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:476050 HCAPLUS
DN 139:367356
TI Polymer electrolytes from PEO and novel quaternary ammonium iodides for dye-sensitized solar cells
AU Kang, J.; Li, W.; Wang, X.; Lin, Y.; Xiao, X.; Fang, S.
CS Institute of Chemistry, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China
SO Electrochimica Acta (2003), 48(17), 2487-2491
CODEN: ELCAAV; ISSN: 0013-4686
PB Elsevier Science Ltd.
DT Journal
LA English
AB Polymer electrolytes were prepared by blending high mol. weight poly(ethylene oxide) (PEO) and novel quaternary ammonium iodides, polysiloxanes with oligo(oxyethylene) side chains and quaternary ammonium groups. XRD measurements confirmed relatively low crystallinity when the quaternary ammonium iodides were incorporated into the PEO host. The ionic conductivity of these complexes was improved with the addition of plasticizers. The improvement in ionic conductivity was determined by the polarity, **viscosity** and amts. of plasticizers. A plasticized electrolyte containing the novel quaternary ammonium iodide was successfully used in fabricating a quasi-solid-state dye-sensitized solar cell for the 1st time. The fill factor and energy conversion efficiency of the cell are 0.68 and 1.39%, resp.
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 76
ST ethylene oxide siloxane quaternary ammonium polymer electrolyte solar cell
IT Photoelectrochemical cells
Polymer electrolytes
(blend of poly(ethylene oxide) and polysiloxane having quaternary ammonium groups as electrolyte for dye-sensitized solar cells)
IT Quaternary ammonium compounds, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(blend of poly(ethylene oxide) and polysiloxane having quaternary ammonium groups as electrolyte for dye-sensitized solar cells)
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(blend with polysiloxane having oligo(oxyethylene) side chains and quaternary ammonium iodide groups; blend of poly(ethylene oxide) and polysiloxane having quaternary ammonium groups as electrolyte for dye-sensitized solar cells)
IT Polysiloxanes, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(polyoxyalkylene-, graft, reaction products with dimethylallylamine and Me iodide; blend of poly(ethylene oxide) and polysiloxane having quaternary ammonium groups as electrolyte for dye-sensitized solar cells)
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)

(polysiloxane-, graft, reaction products with dimethylallylamine and Me iodide; blend of poly(ethylene oxide) and polysiloxane having quaternary ammonium groups as electrolyte for dye-sensitized solar cells)

IT 13463-67-7, Titanium oxide (TiO2), uses
RL: DEV (Device component use); USES (Uses)
(blend of poly(ethylene oxide) and polysiloxane having quaternary ammonium groups as electrolyte for dye-sensitized solar cells with)

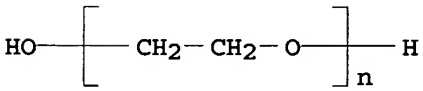
IT **25322-68-3**, PEO
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(blend with polysiloxane having oligo(oxyethylene) side chains and quaternary ammonium iodide groups; blend of poly(ethylene oxide) and polysiloxane having quaternary ammonium groups as **electrolyte** for dye-sensitized solar cells)

IT **96-48-0** 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate
RL: NUU (Other use, unclassified); USES (Uses)
(plasticizer; blend of poly(ethylene oxide) and polysiloxane having quaternary ammonium groups as **electrolyte** for dye-sensitized solar cells with)

IT 74-88-4D, Methyl iodide, reaction products with PEG-grafted polymethylsiloxane hydrosilation products with dimethylallylamine 2155-94-4D, N,N-Dimethylallylamine, reaction products with PEG-grafted polymethylsiloxane, quaternized with Me iodide 27252-80-8D, Polyethylene glycol allyl methyl ether, reaction products with polymethylsiloxane and dimethylallylamine, quaternized with Me iodide 203399-77-3D, Ethylene oxide-methylsilanediol graft copolymer methyl ether, reaction products with dimethylallylamine, quaternized with Me iodide
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(poly(ethylene oxide) blend; blend of poly(ethylene oxide) and polysiloxane having quaternary ammonium groups as electrolyte for dye-sensitized solar cells)

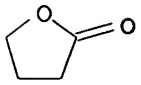
IT **25322-68-3**, PEO
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(blend with polysiloxane having oligo(oxyethylene) side chains and quaternary ammonium iodide groups; blend of poly(ethylene oxide) and polysiloxane having quaternary ammonium groups as **electrolyte** for dye-sensitized solar cells)

RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



IT **96-48-0**
RL: NUU (Other use, unclassified); USES (Uses)
(plasticizer; blend of poly(ethylene oxide) and polysiloxane having quaternary ammonium groups as **electrolyte** for dye-sensitized solar cells with)

RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 8 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:389969 HCAPLUS
DN 138:388171
TI Lithium salt having oligoether group, ionic conducting material, and liquid electrolyte for secondary battery
IN Fujinami, Tatsuo
PA Toyota Motor Corp., Japan; Konpon Kenkyusho K. K.
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003146941	A2	20030521	JP 2001-344886	20011109
	US 2003108798	A1	20030612	US 2002-290201	20021108
PRAI	JP 2001-344886	A	20011109		

OS MARPAT 138:388171
AB The claimed Li salt is represented as LiAlXn(OY)4-n; (X = electron-withdrawing group; Y = oligoether group). The claimed ionic conducting material comprises the Li salt dispersed in a matrix. Optionally, the ionic conducting material comprises BaTiO3. The claimed liquid electrolyte comprises the Li salt dissolved in a solvent. The Li salt provides high ionic conductivity without using a **nonaq.** solvent and safety.
IC ICM C07C053-18
ICS H01B001-06; H01M010-40; C07F001-02; C07F005-06
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 76
ST lithium salt oligoether aluminate ion conductor; polymer electrolyte lithium salt oligoether aluminate secondary battery safety; liq electrolyte lithium salt oligoether aluminate
IT Battery electrolytes
Ionic conductivity
Ionic conductors
Polymer electrolytes
Safety
(aluminate-structure lithium salt having oligoether group for ionic conducting material and liquid electrolyte)
IT Fluoropolymers, uses
Polyoxyalkylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(lithium complex; aluminate-structure lithium salt having oligoether group for ionic conducting material and liquid electrolyte)
IT 528521-95-1 528521-96-2
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(aluminate-structure lithium salt having oligoether group for ionic conducting material and liquid electrolyte)
IT 7439-93-2D, Lithium, polymer complex 9003-11-6D, Ethylene

oxide-propylene oxide copolymer, lithium complex 9003-42-3D, Polyethyl methacrylate, lithium complex 9003-63-8D, Polybutyl methacrylate, lithium complex 9011-14-7D, Polymethyl methacrylate, lithium complex 9011-17-0D, Hexafluoropropylene-vinylidene fluoride copolymer, lithium complex 24937-79-9D, Poly(vinylidene fluoride), lithium complex **25322-68-3D**, lithium complex 26915-72-0D, Methoxypolyethylene glycol methacrylate, lithium complex
RL: TEM (Technical or engineered material use); USES (Uses)
(aluminate-structure lithium salt having oligoether group for ionic conducting material and liquid **electrolyte**)

IT 12047-27-7, Barium titanium oxide (BaTiO3), uses
RL: TEM (Technical or engineered material use); USES (Uses)
(filler; aluminate-structure lithium salt having oligoether group for ionic conducting material and liquid electrolyte)

IT 528521-93-9P 528521-94-0P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation of; aluminate-structure lithium salt having oligoether group for ionic conducting material and liquid electrolyte)

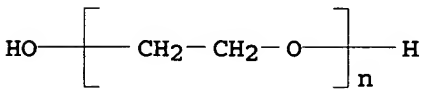
IT 76-05-1, Trifluoroacetic acid, reactions 112-35-6, Triethylene glycol monomethyl ether 16853-85-3, Aluminum lithium tetrahydride
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of; aluminate-structure lithium salt having oligoether group for ionic conducting material and liquid electrolyte)

IT **96-48-0**, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 110-71-4, Ethylene glycol dimethyl ether 111-96-6, Diethylene glycol dimethyl ether 616-38-6, Dimethyl carbonate
RL: TEM (Technical or engineered material use); USES (Uses)
(solvent; aluminate-structure lithium salt having oligoether group for ionic conducting material and liquid **electrolyte**)

IT **25322-68-3D**, lithium complex
RL: TEM (Technical or engineered material use); USES (Uses)
(aluminate-structure lithium salt having oligoether group for ionic conducting material and liquid **electrolyte**)

RN 25322-68-3 HCAPLUS

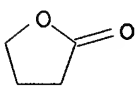
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



IT **96-48-0**, γ-Butyrolactone
RL: TEM (Technical or engineered material use); USES (Uses)
(solvent; aluminate-structure lithium salt having oligoether group for ionic conducting material and liquid **electrolyte**)

RN 96-48-0 HCAPLUS

CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



L17 ANSWER 9 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:945870 HCAPLUS
DN 138:26917
TI **Nonaqueous** electrolyte and secondary **nonaqueous** electrolyte battery
IN Kono, Tatsuoki; Takami, Norio
PA Toshiba Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

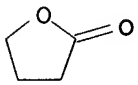
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002359000	A2	20021213	JP 2001-297422	20010927
	JP 3718467	B2	20051124		
	US 2003049540	A1	20030313	US 2002-83372	20020227
PRAI	JP 2001-94051	A	20010328		
	JP 2001-297422	A	20010927		

AB The electrolyte solution has an salt dissolved in an solvent mixture, and a polymer additive in the solvent mixture; where the electrolyte solution is a non-Newtonian fluid with **viscosity** 7-30000 cp at 20°C. The ratio (p) of ion conductivity to **viscosity** (σ/η) in the electrolyte solution is < 0.1, the solvent mixture contains γ-butyrolactone, and the content of the polymer material of the formula (CH2CH2O)n is 0.01-10 % of the solvent mixture The battery has an active mass containing cathode, a Li intercalating anode and the above required electrolyte solution in between.
IC ICM H01M010-40
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST lithium secondary battery electrolyte **nonaq** solvent polymer additive; **nonaq** solvent butyrolactone polymer additive content **viscosity**
IT Battery electrolytes
(Li salt electrolyte solns. containing polymer additives in γ-butyrolactone solvent mixts. with controlled **viscosity** for secondary lithium batteries)
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(Li salt electrolyte solns. containing polymer additives in γ-butyrolactone solvent mixts. with controlled **viscosity** for secondary lithium batteries)
IT Carbonaceous materials (technological products)
RL: DEV (Device component use); USES (Uses)
(anode; Li salt electrolyte solns. containing polymer additives in γ-butyrolactone solvent mixts. with controlled **viscosity** for secondary lithium batteries)
IT Secondary batteries
(lithium; Li salt electrolyte solns. containing polymer additives in γ-butyrolactone solvent mixts. with controlled **viscosity** for secondary lithium batteries)
IT **96-48-0**, γ-Butyrolactone 96-49-1, Ethylene carbonate 14283-07-9, Lithium tetrafluoroborate **25322-68-3**, Polyethylene oxide
RL: DEV (Device component use); USES (Uses)
(Li salt **electrolyte** solns. containing polymer additives in γ-butyrolactone solvent mixts. with controlled **viscosity** for secondary lithium batteries)
IT 111706-40-2, Cobalt lithium oxide (CoLi0-102)
RL: DEV (Device component use); USES (Uses)

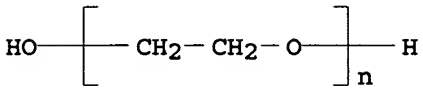
(cathode; Li salt electrolyte solns. containing polymer additives in γ-butyrolactone solvent mixts. with controlled **viscosity** for secondary lithium batteries)

IT **96-48-0**, γ-Butyrolactone **25322-68-3**, Polyethylene oxide
RL: DEV (Device component use); USES (Uses)
(Li salt **electrolyte** solns. containing polymer additives in γ-butyrolactone solvent mixts. with controlled **viscosity** for secondary lithium batteries)

RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)

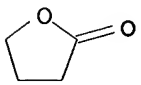


RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)

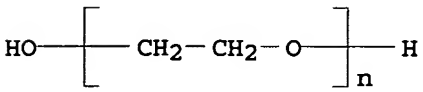


L17 ANSWER 10 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:554946 HCAPLUS
DN 137:302681
TI Ionic conductance behavior of plasticized polymer electrolytes containing different plasticizers
AU Kumar, Manoj; Sekhon, S. S.
CS Department of Applied Physics, G N D University, Amritsar, 143005, India
SO Ionics (2002), 8(3 & 4), 223-233
CODEN: IONIFA; ISSN: 0947-7047
PB Institute for Ionics
DT Journal
LA English
AB The effect of different plasticizers on the properties of PEO-NH4F polymer electrolytes was studied. Aprotic organic solvents like propylene carbonate (PC), ethylene carbonate (EC), γ-butyrolactone (γ-BL), dimethylacetamide (DMA), DMF, di-Et carbonate (DEC) and di-Me carbonate (DMC) having different values of donor number, dielec. constant, **viscosity** etc. were used as plasticizers. The addition of plasticizer was found to modify the conductivity of polymer electrolytes by increasing the amorphous content as well as by dissociating the ion aggregates present in polymer electrolytes at higher salt concns. The conductivity enhancement with different plasticizers is closely related to the donor number of the plasticizer used rather than its dielec. constant The increase in conductivity with the addition of plasticizer further is dependent upon the level of ion association present in the electrolytes. The variation of conductivity as a function of plasticizer concentration and temperature also was studied and maximum conductivity of .apprx.10-3 S /cm at room temperature was obtained. X-ray diffraction studies show an increase of amorphous content in polymer electrolytes with

the addition of plasticizers.
CC 76-1 (Electric Phenomena)
Section cross-reference(s): 36
ST ionic cond polymer electrolyte plasticizer
IT Ionic conductivity
Plasticizers
Polymer electrolytes
(ionic conductance behavior of plasticized polymer electrolytes containing different plasticizers)
IT Polyoxyalkylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(ionic conductance behavior of plasticized polymer electrolytes containing different plasticizers)
IT Solvents
(organic, plasticizers; ionic conductance behavior of plasticized polymer electrolytes containing different plasticizers)
IT 68-12-2, DMF, uses **96-48-0**, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 127-19-5, Dimethylacetamide 616-38-6, Dimethyl carbonate
RL: MOA (Modifier or additive use); USES (Uses)
(ionic conductance behavior of plasticized polymer **electrolytes** containing different plasticizers)
IT 12125-01-8, Ammonium fluoride (NH4F) **25322-68-3**, Polyethylene oxide
RL: TEM (Technical or engineered material use); USES (Uses)
(ionic conductance behavior of plasticized polymer **electrolytes** containing different plasticizers)
IT **96-48-0**, γ-Butyrolactone
RL: MOA (Modifier or additive use); USES (Uses)
(ionic conductance behavior of plasticized polymer **electrolytes** containing different plasticizers)
RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



IT **25322-68-3**, Polyethylene oxide
RL: TEM (Technical or engineered material use); USES (Uses)
(ionic conductance behavior of plasticized polymer **electrolytes** containing different plasticizers)
RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



RE.CNT 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 11 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:163800 HCAPLUS
DN 136:219519

TI Phenyl boron-based compounds as anion receptors for **nonaqueous** battery electrolytes
IN Lee, Hung Sui; Yang, Xiao-qing; McBreen, James; Sun, Xuehui
PA Brookhaven Science Associates, Llc, USA
SO U.S., 15 pp., Cont.-in-part of U. S. 6,022,643.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6352798	B1	20020305	US 2000-492569	20000127
	US 6022643	A	20000208	US 1997-986846	19971208
PRAI	US 1997-986846	A2	19971208		

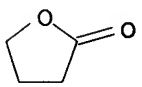
OS MARPAT 136:219519
AB Novel fluorinated boronate-based compds. which act as anion receptors in **nonaq.** battery electrolytes are provided. When added to **nonaq.** battery electrolytes, the fluorinated boronate-based compds. of the invention enhance ionic conductivity and cation transference number of **nonaq.** electrolytes. The fluorinated boronate-based anion receptors include different fluorinated alkyl and aryl groups.
IC ICM H01M006-14
INCL 429324000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 27
ST battery electrolyte anion receptor fluorinated boronate based compd
IT Battery electrolytes
Ionic conductivity
(Ph boron-based compds. as anion receptors for **nonaq.** battery electrolytes)
IT Polyanilines
Polyoxyalkylenes, uses
Polysulfides
Transition metal chalcogenides
Transition metal oxides
RL: DEV (Device component use); USES (Uses)
(Ph boron-based compds. as anion receptors for **nonaq.** battery electrolytes)
IT Oxides (inorganic), uses
RL: DEV (Device component use); USES (Uses)
(lithiated; Ph boron-based compds. as anion receptors for **nonaq**. battery electrolytes)
IT Lithium alloy, base
RL: DEV (Device component use); USES (Uses)
(Ph boron-based compds. as anion receptors for **nonaq.** battery electrolytes)
IT 75-05-8, Acetonitrile, uses **96-48-0**, γ-Butyrolactone 96-49-1, Ethylene carbonate 107-31-3, Methyl formate 108-32-7, Propylene carbonate 109-87-5, Dimethoxymethane 109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 115-10-6, Dimethyl ether 126-33-0, Sulfolane 534-22-5, 2-Methylfuran 616-38-6, Dimethyl carbonate 646-06-0, 1,3-Dioxolane 872-50-4, 1-Methyl-2-pyrrolidinone, uses 1072-47-5 1072-71-5, 2,5-Dimercapto-1,3,4-thiadiazole 2923-17-3, Lithium trifluoroacetate 7439-93-2, Lithium, uses 7440-44-0D, Carbon, intercalation compound, with lithium 7447-41-8, Lithium chloride, uses 7550-35-8, Lithium bromide 7789-24-4, Lithium fluoride, uses 7791-03-9, Lithium perchlorate 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 10377-51-2, Lithium iodide 12031-65-1, Lithium

nickel oxide linio2 12057-17-9, Lithium manganese oxide limn2o4 12162-79-7, Lithium manganese oxide limno2 12190-79-3, Cobalt lithium oxide colio2 12201-18-2, Lithium molybdenum sulfide limos2 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 19836-78-3, 3-Methyl-2-oxazolidinone 21324-40-3, Lithium hexafluorophosphate 25014-41-9, Polyacrylonitrile 25233-30-1, Polyaniline **25322-68-3**, Peo 25948-29-2, Carbon disulfide, homopolymer 29935-35-1, Lithium hexafluoroarsenate 39448-96-9, Graphite lithium 55326-82-4, Lithium titanium sulfide litis2 55886-04-9, Lithium niobium selenide Li3NbSe3 87187-79-9, Propanoic acid, pentafluoro-, lithium salt 87442-01-1, Benzoic acid, pentafluoro-, lithium salt 131344-56-4, Cobalt lithium nickel oxide 138187-48-1, Lithium vanadium oxide Li1.2V2O5 152991-98-5, Aluminum lithium nickel oxide 159967-11-0, Lithium magnesium nickel oxide 180984-62-7, Lithium nickel titanium oxide 256345-13-8, Lithium vanadium oxide Li2.5V6O13
RL: DEV (Device component use); USES (Uses)
(Ph boron-based compds. as anion receptors for **nonaq.** battery **electrolytes**)

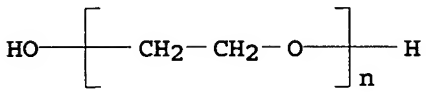
IT 23542-71-4P 365458-32-8P 365458-33-9P 365458-34-0P 365458-35-1P 365458-36-2P 365458-37-3P 365458-38-4P 365458-39-5P 365458-40-8P 402564-35-6P 402564-36-7P 402564-37-8P 402564-38-9P 402564-39-0P
RL: DEV (Device component use); MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(Ph boron-based compds. as anion receptors for **nonaq.** battery electrolytes)

IT **96-48-0**, γ-Butyrolactone **25322-68-3**, Peo
RL: DEV (Device component use); USES (Uses)
(Ph boron-based compds. as anion receptors for **nonaq.** battery **electrolytes**)

RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 12 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:488750 HCAPLUS
DN 135:79460
TI **Nonaqueous** electrolytic secondary battery
IN Hosoya, Yosuke
PA Sony Corporation, Japan
SO Eur. Pat. Appl., 16 pp.
CODEN: EPXXDW
DT Patent

LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1113515	A1	20010704	EP 2000-128148	20001221
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001185221	A2	20010706	JP 1999-369266	19991227
	US 2001036579	A1	20011101	US 2000-749982	20001227
	US 6656634	B2	20031202		
PRAI	JP 1999-369266	A	19991227		

AB A **nonaq.** electrolytic cell comprises a pos. electrode, which has a pos. electrode active material layer containing, at least a pos. electrode active material, a neg. electrode, which has a neg. electrode active material layer containing, at least, a neg. electrode active material, and an electrolyte wherein a sulfur compound is added to at least one of the pos. electrode active material layer, the neg. electrode active material layer, and the electrolyte.

IC ICM H01M004-50
ICS H01M004-52; H01M004-58; H01M004-62; H01M010-40

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST battery **nonaq** electrolyte

IT Battery anodes
Battery cathodes
Battery electrolytes
Conducting polymers
(**nonaq.** electrolytic secondary battery)

IT Coke
Fluoropolymers, uses
Polyacetylenes, uses
Polyoxyalkylenes, uses
Polyphosphazenes
RL: DEV (Device component use); USES (Uses)
(**nonaq.** electrolytic secondary battery)

IT Thiols (organic), uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(**nonaq.** electrolytic secondary battery)

IT Carbon fibers, uses
RL: DEV (Device component use); USES (Uses)
(vitreous; **nonaq.** electrolytic secondary battery)

IT 96-47-9, 2-Methyltetrahydrofuran **96-48-0**, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 110-71-4, 1,2-Dimethoxyethane 126-33-0, Sulfolane 554-12-1, Methylpropionate 616-38-6, Dimethyl carbonate 623-42-7, Methyl butyrate 623-53-0, Ethyl methyl carbonate 623-96-1, Dipropyl carbonate 629-14-1, 1,2-Diethoxyethane 872-36-6, Vinylene carbonate 2916-31-6 4437-85-8, Butylene carbonate 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses 7791-03-9, Lithium perchlorate 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 12190-79-3, cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 24937-79-9, Pvdf 25067-58-7, Polyacetylene **25322-68-3**, Peo 25322-69-4, Polypropylene oxide 25684-76-8, Tetrafluoroethylene-vinylidene fluoride copolymer 28960-88-5, Trifluoroethylene-vinylidene fluoride copolymer 29935-35-1, Lithium hexafluoroarsenate
RL: DEV (Device component use); USES (Uses)
(**nonaq. electrolytic** secondary battery)

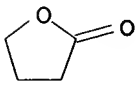
IT 693-36-7, Distearyl thiodipropionate 7487-88-9, Magnesium sulfate, uses

7757-82-6, Sodium sulfate, uses 7757-83-7, Sodium sulfite 7757-88-2, Magnesium sulfite 7778-80-5, Potassium sulfate, uses 10117-38-1, Potassium sulfite
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(**nonaq.** electrolytic secondary battery)

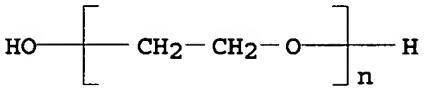
IT 872-50-4, n-Methylpyrrolidone, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**nonaq.** electrolytic secondary battery)

IT **96-48-0**, γ-Butyrolactone **25322-68-3**, Peo
RL: DEV (Device component use); USES (Uses)
(**nonaq. electrolytic** secondary battery)

RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 13 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:246688 HCAPLUS
DN 134:254694
TI Gel electrolyte battery
IN Shibuya, Mashio; Hatazawa, Tsuyonobu; Hara, Tomitaro; Shibamoto, Goro; Goto, Shuji
PA Sony Corporation, Japan
SO Eur. Pat. Appl., 24 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1089371	A1	20010404	EP 2000-121124	20000928
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001167797	A2	20010622	JP 1999-375345	19991228
	TW 512555	B	20021201	TW 2000-89119769	20000925
	NO 2000004856	A	20010402	NO 2000-4856	20000927
	US 6509123	B1	20030121	US 2000-672881	20000928
	CN 1293461	A	20010502	CN 2000-128592	20000930
PRAI	JP 1999-279790	A	19990930		
	JP 1999-375345	A	19991228		

AB The present invention provides a gel electrolyte cell including a **nonaq.** electrolytic solution containing lithium-containing electrolyte salt

solved in a **nonaq.** solvent and made into a gel state by a matrix polymer, and the gel electrolyte contains vinylene carbonate or derivative thereof in the amount not less than 0.05 wt% and not greater than 5 wt%. This gel electrolyte exhibits an excellent chemical stability with the neg. electrode, strength, and liquid-retention characteristic. This gel electrolyte enables to obtain a gel electrolyte cell satisfying the cell capacity, cycle characteristic, load characteristic, and low-temperature characteristic.

IC ICM H01M010-40

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST battery gel electrolyte

IT Battery electrolytes
Gels
(gel electrolyte battery)

IT Fluoropolymers, uses
Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(gel electrolyte battery)

IT Lithium alloy, base
RL: DEV (Device component use); USES (Uses)
(gel electrolyte battery)

IT 7429-90-5, Aluminum, uses
RL: DEV (Device component use); USES (Uses)
(current collector; gel electrolyte battery)

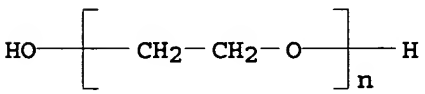
IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 872-36-6, Vinylene carbonate 7439-93-2, Lithium, uses 7440-44-0, Carbon, uses 7791-03-9, Lithium perchlorate 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 12190-79-3, Cobalt lithium oxide colio2 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 24937-79-9, Pvdf 25014-41-9, Polyacrylonitrile 25067-61-2, Polymethacrylonitrile **25322-68-3**, Peo 25322-69-4, Polypropylene oxide 90076-65-6 113066-89-0, Cobalt lithium nickel oxide Co0.2LiNi0.8O2 132843-44-8
RL: DEV (Device component use); USES (Uses)
(gel **electrolyte** battery)

IT **96-48-0**, γ-Butyrolactone 452-10-8, 2,4-Difluoroanisole 7782-42-5, Graphite, uses 167951-81-7
RL: MOA (Modifier or additive use); USES (Uses)
(gel **electrolyte** battery)

IT **25322-68-3**, Peo
RL: DEV (Device component use); USES (Uses)
(gel **electrolyte** battery)

RN 25322-68-3 HCAPLUS

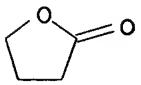
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



IT **96-48-0**, γ-Butyrolactone
RL: MOA (Modifier or additive use); USES (Uses)
(gel **electrolyte** battery)

RN 96-48-0 HCAPLUS

CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 14 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2000:592491 HCAPLUS
DN 133:196001
TI Gel electrolyte battery
IN Shibuya, Mashio; Goto, Shuji
PA Sony Corp., Japan
SO Eur. Pat. Appl., 21 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1030398	A1	20000823	EP 2000-102764	20000210
	EP 1030398	B1	20051026		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2000243447	A2	20000908	JP 1999-41456	19990219
	US 6465134	B1	20021015	US 2000-499448	20000207
	TW 494592	B	20020711	TW 2000-89102212	20000210
	EP 1619734	A1	20060125	EP 2005-10960	20000210
	R: DE, FR, GB				
	CN 1267926	A	20000927	CN 2000-108303	20000218
PRAI	JP 1999-41456	A	19990219		
	EP 2000-102764	A3	20000210		

AB A gel electrolyte comprised of a **nonaq.** electrolytic solution immersed in a matrix polymer, in which ion conductivity of a solvent is improved and superior cyclic characteristics are achieved. To this end, the gel electrolyte includes an electrolyte, a matrix polymer and a **nonaq**. solvent. The **nonaq.** solvent is a mixed solvent of ethylene carbonate (EC), propylene carbonate (PC) and γ-butyrolactone (GBL). The **nonaq.** solvent is of a weight composition in an area in a triangular phase diagram (EC, PC, GBL) surrounded by a point (70, 30, 0), a point (55, 15, 30), a point (15, 55, 30) and a point (30, 70, 0). A gel electrolyte battery employing this electrolyte is also disclosed.

IC ICM H01M010-40
ICS H01M006-22
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST battery gel electrolyte
IT Battery electrolytes
Secondary batteries
(gel electrolyte battery)
IT Fluoropolymers, uses
Polyoxyalkylenes, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(gel electrolyte battery)
IT 7782-42-5, Graphite, uses 12190-79-3, Cobalt lithium oxide colio2

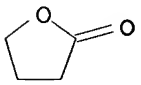
113066-91-4, Cobalt lithium nickel oxide Co0.8LiNi0.2O2
RL: DEV (Device component use); USES (Uses)
(gel electrolyte battery)

IT **96-48-0**, γ-Butyrolactone 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 616-38-6, Dimethyl carbonate 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 21324-40-3, Lithium hexafluorophosphate 24937-79-9, Polyvinylidene fluoride **25322-68-3**, Peo 25322-69-4, Polypropylene oxide 90076-65-6
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(gel **electrolyte** battery)

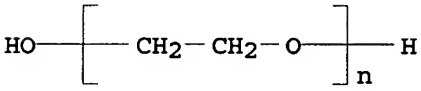
IT 100-66-3D, Anisole, fluoro derivative
RL: MOA (Modifier or additive use); USES (Uses)
(gel electrolyte battery)

IT **96-48-0**, γ-Butyrolactone **25322-68-3**, Peo
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(gel **electrolyte** battery)

RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 15 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2000:362802 HCAPLUS
DN 133:7057
TI Battery comprising gel electrolyte with high ion conductivity and storage stability
IN Akashi, Hiroyuki; Shibuya, Mashio; Shibamoto, Goro
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2000149992	A2	20000530	JP 1998-317964	19981109
PRAI JP 1998-317964		19981109		

AB This battery comprises a cathode, an anode, and a gel electrolytic mixture put between the electrodes: and the gel electrolytic mixture contains a polymer, an electrolytic substance, and a **non-aqueous** solvent mixture containing mainly ethylene carbonate (EC), propylene carbonate

(PC), and γ-Bu lactone (GBL) in a ratio (weight%) within an area defined by points (EC : PC : GBL); A (20 : 0 : 80), B (20 : 20 : 60), C (50 : 30 : 20), D (60 : 20 : 20), and E (60 : 0 : 40) of a ternary system diagram of EC, PC, and GBL. The electrolytic substance may be LiPF6, LiN(CF3SO2)2 and the polymer may be poly(vinylidene fluoride), vinylidene fluoride-hexafluoropropylene copolymer, poly(ethylene oxide), and/or poly(propylene oxide). Owing to the optimized composition of the solvents in the gel electrolytic mixture the battery is provided with high ion conductivity at a low temperature and high storage stability at a high temperature, resulting in a long cycle life and a high initial charging and discharging efficiency.

IC ICM H01M010-40
ICS C08K005-04; C08L027-16; C08L059-00; H01M006-22

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST electrolyte gel solvent compn optimization battery; fluoropolymer electrolyte gel solvent optimization battery; ethylene propylene carbonate butyl lactone electrolyte battery 2134567 4512367

IT Fluoropolymers, uses
Polyoxyalkylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(gel electrolyte containing; **non-aqueous** electrolytic lithium battery containing gel electrolytic mixture with optimized solvent composition for long cycle life)

IT Secondary batteries
(lithium; **non-aqueous** electrolytic lithium battery containing gel electrolytic mixture with optimized solvent composition for long cycle life)

IT Battery electrolytes
(**non-aqueous** electrolytic lithium battery containing gel electrolytic mixture with optimized solvent composition for long cycle life)

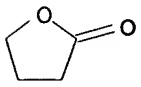
IT 7782-42-5, Graphite, uses
RL: DEV (Device component use); USES (Uses)
(anode containing; **non-aqueous** electrolytic lithium battery containing gel electrolytic mixture with optimized solvent composition for long cycle life)

IT 12190-79-3, Cobalt lithium oxide (CoLiO2) 113066-91-4, Cobalt lithium nickel oxide (Co0.8LiNi0.2O2)
RL: DEV (Device component use); USES (Uses)
(cathode containing; **non-aqueous** electrolytic lithium battery containing gel electrolytic mixture with optimized solvent composition for long cycle life)

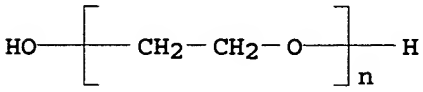
IT **96-48-0** 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 21324-40-3, Lithium hexafluorophosphate 24937-79-9, Poly(vinylidene fluoride) **25322-68-3**, Poly(ethylene oxide) 25322-69-4, Poly(propylene oxide) 90076-65-6, Lithium bis(trifluoromethylsulfonyl)amide
RL: TEM (Technical or engineered material use); USES (Uses)
(gel **electrolyte** containing; **non-aqueous** **electrolytic** lithium battery containing gel **electrolytic** mixture with optimized solvent composition for long cycle life)

IT **96-48-0** **25322-68-3**, Poly(ethylene oxide)
RL: TEM (Technical or engineered material use); USES (Uses)
(gel **electrolyte** containing; **non-aqueous** **electrolytic** lithium battery containing gel **electrolytic**

mixture with optimized solvent composition for long cycle life)
RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



L17 ANSWER 16 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2000:166259 HCAPLUS
DN 132:210209
TI Secondary **nonaqueous**-electrolyte batteries with electrolytes containing cyanoethoxy compounds
IN Kobayashi, Aya; Izuchi, Shuichi
PA Yuasa Battery Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2000077096	A2	20000314	JP 1998-244674	19980831
PRAI JP 1998-244674		19980831		

OS MARPAT 132:210209
AB Claimed batteries are equipped with electrolytes containing cyanoethoxy compds. R(OC2H4CN)n (n = 1-4; R = CmH2m+2-n, CmH2m+2-n(OC2H4)p, CmH2m+2-nCO, or CmH2m+2-nOCO; m = 1-3; p = 1-4) as **nonaq.** solvents for Li salts. Optionally, the batteries are equipped with gelled polymer electrolytes. The batteries have long cycle life at low temperature
IC ICM H01M010-40
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST cyanoethoxy compd **nonaq** electrolyte solvent battery; lithium battery electrolyte solvent cyanoethoxy compd
IT Secondary batteries
(lithium; **nonaq.** batteries with electrolytes containing cyanoethoxy compds. for long cycle life at low temperature)
IT Battery electrolytes
(**nonaq.** batteries with electrolytes containing cyanoethoxy compds. for long cycle life at low temperature)
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(trifunctional acrylates, lithium complexes, gelled electrolytes; **nonaq.** batteries with electrolytes containing cyanoethoxy compds. for long cycle life at low temperature)
IT 14283-07-9, Lithium tetrafluoroborate

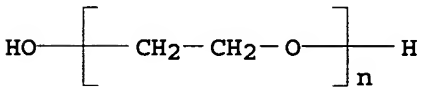
RL: DEV (Device component use); USES (Uses)
(electrolytes; **nonaq.** batteries with electrolytes containing cyanoethoxy compds. for long cycle life at low temperature)

IT **25322-68-3D**, Polyethylene glycol, trifunctional acrylates, lithium complexes
RL: DEV (Device component use); USES (Uses)
(gelled **electrolytes**; **nonaq.** batteries with **electrolytes** containing cyanoethoxy compds. for long cycle life at low temperature)

IT **96-48-0**, γ-Butyrolactone 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 110-67-8 1656-48-0, Bis-2-cyanoethyl ether 2141-62-0 3386-87-6 5325-93-9 20597-73-3 32846-35-8, Bis 2-cyanoethyl carbonate 35633-51-3 260362-83-2
RL: DEV (Device component use); USES (Uses)
(solvents; **nonaq.** batteries with **electrolytes** containing cyanoethoxy compds. for long cycle life at low temperature)

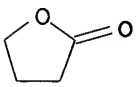
IT **25322-68-3D**, Polyethylene glycol, trifunctional acrylates, lithium complexes
RL: DEV (Device component use); USES (Uses)
(gelled **electrolytes**; **nonaq.** batteries with **electrolytes** containing cyanoethoxy compds. for long cycle life at low temperature)

RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



IT **96-48-0**, γ-Butyrolactone
RL: DEV (Device component use); USES (Uses)
(solvents; **nonaq.** batteries with **electrolytes** containing cyanoethoxy compds. for long cycle life at low temperature)

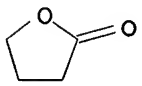
RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



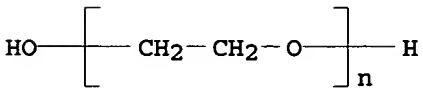
L17 ANSWER 17 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2000:144320 HCAPLUS
DN 132:183114
TI **Nonaqueous** electrolyte batteries
IN Yoshihisa, Hiroyoshi
PA Yuasa Battery Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2000067916	A2	20000303	JP 1998-241440	19980827

PRAI JP 1998-241440 19980827
AB The batteries, containing Li intercalating carbonaceous anodes, use Li2CO3 saturated electrolyte solns. or solid electrolytes.
IC ICM H01M010-40
ICS H01M010-40
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST secondary lithium battery electrolyte lithium carbonate; battery lithium carbonate satd electrolyte
IT Battery electrolytes
(electrolyte solns. and solid electrolytes saturated with lithium carbonate for secondary lithium batteries)
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(electrolyte solns. and solid electrolytes saturated with lithium carbonate for secondary lithium batteries)
IT **96-48-0**, γ-Butyrolactone 96-49-1, Ethylene carbonate 14283-07-9, Lithium fluoroborate 25014-41-9, Polyacrylonitrile **25322-68-3**, Peo
RL: DEV (Device component use); USES (Uses)
(**electrolyte** solns. and solid **electrolytes** saturated with lithium carbonate for secondary lithium batteries)
IT 554-13-2, Lithium carbonate
RL: MOA (Modifier or additive use); USES (Uses)
(electrolyte solns. and solid electrolytes saturated with lithium carbonate for secondary lithium batteries)
IT **96-48-0**, γ-Butyrolactone **25322-68-3**, Peo
RL: DEV (Device component use); USES (Uses)
(**electrolyte** solns. and solid **electrolytes** saturated with lithium carbonate for secondary lithium batteries)
RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



L17 ANSWER 18 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 2000:95943 HCAPLUS
DN 132:125353
TI Boron compounds as anion binding agents for **nonaqueous** battery electrolytes
IN Lee, Hung Sui; Yang, Xia-oing; McBreen, James; Xiang, Caili
PA Brookhaven Science Associates, USA
SO U.S., 11 pp.
CODEN: USXXAM
DT Patent

LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6022643	A	20000208	US 1997-986846	19971208
	US 6352798	B1	20020305	US 2000-492569	20000127
PRAI	US 1997-986846	A2	19971208		

AB Novel fluorinated boron-based compds. which act as anion receptors in **nonaq.** battery electrolytes are provided. The anion receptor is a compound of formula Q3B, where Q is a F-bearing moiety selected from the group of (CF3)2CHO, (CF3)2C(C6H5)O, (CF3)3CO, FC6H4O, F2C6H3O, F4C6HO, C6F5O, CF3C6H4O, and (CF3)2C6H3O. When added to **nonaq.** battery electrolytes, the fluorinated boron-based compds. of the invention enhance ionic conductivity and cation transference number of **nonaq.** electrolytes. The fluorinated boron-based anion receptors include borane and borate compds. bearing different fluorinated alkyl and aryl groups.

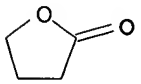
IC ICM H01M006-14
INCL 429324000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST battery electrolyte fluorinated boron based anion receptor
IT Battery electrolytes
Ionic conductivity
(boron compds. as anion binding agents for **nonaq.** battery electrolytes)
IT Intercalation compounds
Polyanilines
Polyoxyalkylenes, uses
Transition metal chalcogenides
Transition metal oxides
RL: DEV (Device component use); USES (Uses)
(boron compds. as anion binding agents for **nonaq.** battery electrolytes)
IT Oxides (inorganic), uses
RL: DEV (Device component use); USES (Uses)
(intercalation compound with lithium; boron compds. as anion binding agents for **nonaq.** battery electrolytes)
IT Secondary batteries
(lithium; boron compds. as anion binding agents for **nonaq.** battery electrolytes)
IT Polysulfides
RL: DEV (Device component use); USES (Uses)
(organic; boron compds. as anion binding agents for **nonaq.** battery electrolytes)
IT Lithium alloy
RL: DEV (Device component use); USES (Uses)
(boron compds. as anion binding agents for **nonaq.** battery electrolytes)
IT 75-05-8, Acetonitrile, uses **96-48-0**, γ-Butyrolactone
96-49-1, Ethylene carbonate 107-31-3, Methyl formate 108-32-7, Propylene carbonate 109-87-5, Dimethoxymethane 109-99-9, uses 110-71-4, 1,2-Dimethoxyethane 115-10-6, Dimethyl ether 126-33-0, Sulfolane 534-22-5, 2-Methylfuran 616-38-6, Dimethyl carbonate 646-06-0, 1,3-Dioxolane 872-50-4, uses 1072-47-5, 1,3-Dioxolane, 4-Methyl 1072-71-5, 2,5-Dimercapto-1,3,4-thiadiazole 2923-17-3, Lithium trifluoroacetate 7439-93-2, Lithium, uses 7439-93-2D, Lithium, intercalation compound with carbon, uses 7440-44-0D, Carbon, intercalation compound with lithium, uses 7447-41-8, Lithium chloride, uses 7550-35-8, Lithium bromide 7789-24-4, Lithium fluoride, uses 7791-03-9 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 10377-51-2,

Lithium iodide 12031-65-1, Lithium nickel oxide linio2 12057-17-9, Lithium manganese oxide limn2o4 12162-79-7, Lithium manganese oxide limno2 12190-79-3, Cobalt lithium oxide colio2 12201-18-2, Lithium molybdenum sulfide limos2 14283-07-9, Lithium tetrafluoroborate 18424-17-4, Lithium hexafluoroantimonate 19836-78-3, 3-Methyl-2-oxazolidinone 21324-40-3, Lithium hexafluorophosphate 25014-41-9, Polyacrylonitrile 25233-30-1, Polyaniline **25322-68-3** 25948-29-2, Carbon disulfide, homopolymer 29935-35-1, Lithium hexafluoroarsenate 39448-96-9, Graphite lithium 55326-82-4, Lithium titanium sulfide litis2 55886-04-9, Lithium niobium selenide Li3NbSe3 87187-79-9 87442-01-1, Benzoic acid, pentafluoro-, lithium salt 138187-48-1, Lithium vanadium oxide Li1,2V2O5 256345-13-8, Lithium vanadium oxide (Li2.5V6O13)
RL: DEV (Device component use); USES (Uses)
(boron compds. as anion binding agents for **nonaq.** battery **electrolytes**)

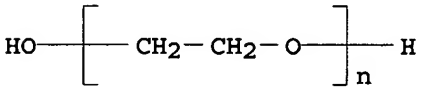
IT 121-43-7 659-18-7 755-53-3 856-46-2 1095-03-0 1109-15-5 6919-80-8 32766-52-2 146355-12-6 210834-28-9 210834-35-8 210834-37-0 210834-40-5 210834-42-7
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(boron compds. as anion binding agents for **nonaq.** battery electrolytes)

IT **96-48-0**, γ-Butyrolactone **25322-68-3**
RL: DEV (Device component use); USES (Uses)
(boron compds. as anion binding agents for **nonaq.** battery **electrolytes**)

RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



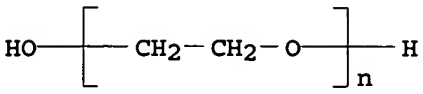
RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



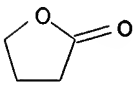
RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 19 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:499496 HCAPLUS
DN 131:288823
TI The measurement of self-diffusion coefficients of various species by the pulse gradient-field spin-echo NMR method. The motions of ions in the electrolytes for lithium batteries
AU Hayamizu, Kikuko; Aihara, Yuichi
CS Natl. Inst. Mater. Chem. Res., Tsukuba, 305-8565, Japan
SO Materia (1999), 38(7), 555-558
CODEN: MTERE2; ISSN: 1340-2625
PB Nippon Kinzoku Gakkai

DT Journal
LA Japanese
AB The title PGSE-NMR method was applied to the measurements of self-diffusion coefficient (D) of ions in the electrolytes for Li batteries. The NMR measurement nuclei were 7Li for Li+, 19F for N(SO2CF3)- and 1H for solvents used for the batteries, resp. The measured D values of 14 organic solvents and Li+ and N(SO2CF3)2- in their solvents were inversely proportional to the solvent **viscosities** according to the Stokes-Einstein equation. The D ratio of Li+ to the solvent was >2 in ethylene carbonate and γ-butyrolactone, indicating 2 mols. of the solvents can solvate Li+ and that for N(SO2CF3)2- was 1.2 in every solvents, indicating the less solvation to the anion. The molar elec. conds. of LiN(SO2CF3)2 evaluated from the D values in organic solvents using the Nernst-Einstein equation were different from those obtained by electrochem. a.c. method. The differences are attributed to the dissociation degrees of the electrolyte. The PGSE-NMR method was also applied to polymer electrolyte gels using poly(ethylene oxide) as a polymer matrix.
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 65
ST lithium battery electrolyte ion motion; self diffusion coeff lithium battery electrolyte
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(electrolyte; measurements of self-diffusion coefficient of ions in electrolytes for Li batteries)
IT Battery electrolytes
Electric conductivity
(measurements of self-diffusion coefficient of ions in electrolytes for Li batteries)
IT Diffusion
(self-; measurements of self-diffusion coefficient of ions in electrolytes for Li batteries)
IT **25322-68-3**
RL: DEV (Device component use); USES (Uses)
(**electrolyte**; measurements of self-diffusion coefficient of ions in **electrolytes** for Li batteries)
IT **96-48-0** 96-49-1, Ethylene carbonate 108-29-2, γ-Valerolactone 108-32-7, Propylene carbonate 109-99-9, uses 110-71-4 111-96-6, Diglyme 112-49-2, Triglyme 123-91-1, 1,4-Dioxane, uses 616-38-6, Dimethyl carbonate 872-50-4, n-Methylpyrrolidone, uses 4437-85-8, Butylene carbonate
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(measurements of self-diffusion coefficient of ions in **electrolytes** for Li batteries)
IT 17341-24-1, Lithium(1+), processes 98837-98-0
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(measurements of self-diffusion coefficient of ions in electrolytes for Li batteries)
IT **25322-68-3**
RL: DEV (Device component use); USES (Uses)
(**electrolyte**; measurements of self-diffusion coefficient of ions in **electrolytes** for Li batteries)
RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)

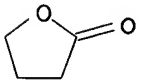


IT **96-48-0**
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(measurements of self-diffusion coefficient of ions in **electrolytes** for Li batteries)
RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)

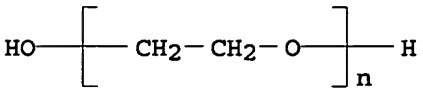


L17 ANSWER 20 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:73180 HCAPLUS
DN 130:189931
TI Easy Preparation and Useful Character of Organogel Electrolytes Based on Low Molecular Weight Gelator
AU Hanabusa, Kenji; Hiratsuka, Kaori; Kimura, Mutsumi; Shirai, Hirofusa
CS Department of Functional Polymer Science Faculty of Textile Science Technology, Shinshu University, Ueda, 386-8567, Japan
SO Chemistry of Materials (1999), 11(3), 649-655
CODEN: CMATEX; ISSN: 0897-4756
PB American Chemical Society
DT Journal
LA English
AB Using N-carbobenzyloxy-L-isoleucylaminooctadecane as a low mol. weight gelator for polar solvents, organogel electrolytes were prepared from supporting electrolyte and a polar solvent such as DMF, DMSO, and PC by phys. gelation. The ionic conductivity of the prepared organogel electrolytes decreased very slightly with increasing concentration of gelator, while the gel strength drastically increased with increasing concentration The organogel prepared from DMF exhibited relatively high ionic conductivity, interpreted due to the high mobility of carrier ions in the low-**viscosity** DMF. Arrhenius plots of ionic conductivities of organogel electrolytes indicate that the behavior of supporting electrolytes in the organogels is essentially similar to that in the isotropic solution, and the ionic mobility of supporting electrolytes is scarcely affected by the gelator mols. The optimal concentration of supporting electrolytes in organogel electrolytes to achieve both high conductivity and high gel strength was 0.05-0.2 M. The addition of PEG to organogel electrolytes markedly raised the gel strength without decreasing ionic conductivity
CC 76-2 (Electric Phenomena)
Section cross-reference(s): 72
ST organogel electrolyte concd prepn gelator carbobenzyloxyisoleucylaminoocta decane polar solvent
IT Optimization
(concentration of electrolytes; easy preparation and useful character of organogel electrolytes based on low mol. weight gelator)

IT Gelation agents
(easy preparation and useful character of organogel electrolytes based on low mol. weight gelator)
IT Polyoxyalkylenes, properties
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(easy preparation and useful character of organogel electrolytes based on low mol. weight gelator)
IT Polar solvents
(gelator for; easy preparation and useful character of organogel electrolytes based on low mol. weight gelator)
IT Electric current carriers
(ions, high mobility of; easy preparation and useful character of organogel electrolytes based on low mol. weight gelator)
IT Ionic conductivity
(organogel electrolytes; easy preparation and useful character of organogel electrolytes based on low mol. weight gelator)
IT Electrolytes
(organogel; easy preparation and useful character of organogel electrolytes based on low mol. weight gelator)
IT Gels
(strength of; easy preparation and useful character of organogel electrolytes based on low mol. weight gelator)
IT 212840-68-1
RL: MOA (Modifier or additive use); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(Z-L-Ile-NHC18H37 gelator; easy preparation and useful character of organogel electrolytes based on low mol. weight gelator)
IT 67-56-1, Methanol, properties 67-63-0, 2-Propanol, properties 67-64-1, Acetone, properties 71-23-8, 1-Propanol, properties 71-36-3, 1-Butanol, properties 75-05-8, Acetonitrile, properties 78-93-3, 2-Butanone, properties **96-48-0**, γ-Butyrolactone 141-78-6, Ethyl acetate, properties **25322-68-3**, Polyethylene glycol
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(easy preparation and useful character of organogel **electrolytes** based on low mol. weight gelator)
IT 1923-70-2, Tetra-n-butylammonium perchlorate 7791-03-9, Lithium perchlorate (LiClO4)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(electrolyte; easy preparation and useful character of organogel electrolytes based on low mol. weight gelator)
IT 67-68-5, Dimethyl sulfoxide, properties 68-12-2, Dimethyl formamide, properties
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(polar solvent; easy preparation and useful character of organogel electrolytes based on low mol. weight gelator)
IT **96-48-0**, γ-Butyrolactone **25322-68-3**, Polyethylene glycol
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(easy preparation and useful character of organogel **electrolytes** based on low mol. weight gelator)
RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 21 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:545734 HCAPLUS
DN 129:191553
TI Block graft copolymer, crosslinked solid electrolyte using the polymer, and manufacture of the electrolyte
IN Hirahara, Kazuhiro; Nakanishi, Mitsuru; Isono, Yoshinobu; Takano, Atsushi
PA Shin-Etsu Chemical Industry Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 10223042	A2	19980821	JP 1997-32792	19970131
JP 3495870	B2	20040209		
PRAI JP 1997-32792		19970131		

AB The copolymer with d.p. ≥210 comprises (A) [CH2CR1-[p-C6H4O(CH2CHR2O)nR3]] (R1 = H, Me, Et; R2 = H, Me; R3 = alkyl, aryl, acyl, silyl, cyanoalkyl; n = 1-100; number average mol. weight of the graft chain is 45-4400) with d.p. ≥10 as a segment and (B) [CH2CR4-[p-C6H4SiR5R6(CH2CH:CH2)]] with d.p. ≥200 as another segment at A:B = 1:20-20:1. The solid electrolyte is manufactured by irradiating of high energy beam on the block graft copolymer and adding an **nonaq.** electrolyte to the resulting crosslinked polymer. The solid electrolyte is also claimed, which is useful for a film battery. The solid electrolyte shows no elution of the liquid electrolyte under compression.
IC ICM H01B001-12
ICS C08F293-00
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 35, 76
ST crosslinked block graft copolymer solid electrolyte; silyl contg arom block graft copolymer; polyoxyalkylene grafted block copolymer electrolyte; film battery solid polymer electrolyte; **nonaq** liq electrolyte elution prevention
IT Electrolytic solutions
Primary batteries
Secondary batteries
Solid electrolytes
(crosslinked block graft copolymer as solid electrolyte containing liquid electrolyte for battery)
IT Polyoxyalkylenes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; crosslinked block graft copolymer as solid electrolyte containing liquid electrolyte for battery)

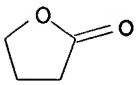
IT 75-21-8DP, Oxirane, graft copolymer with hydroxy-containing block copolymers, crosslinked, uses 211937-66-5DP, hydrogenated, graft copolymer with ethylene oxide, crosslinked
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(crosslinked block graft copolymer as solid electrolyte containing liquid electrolyte for battery)

IT 7791-03-9, Lithium perchlorate 12007-60-2, Lithium tetraborate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium trifluoromethanesulfonate 90076-65-6
RL: TEM (Technical or engineered material use); USES (Uses)
(electrolyte; crosslinked block graft copolymer as solid electrolyte containing liquid electrolyte for battery)

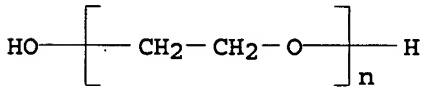
IT 75-05-8, Acetonitrile, uses 96-47-9, 2-Methyl tetrahydrofuran **96-48-0**, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7 109-99-9, THF, uses 110-71-4, 1,2-Dimethoxyethane 111-46-6, uses 111-96-6, Diethylene glycol dimethyl ether 112-36-7, Diethylene glycol diethyl ether 646-06-0, Dioxolane 1679-47-6, 2-Methyl-γ-butyrolactone 24991-55-7, Polyethylene glycol dimethyl ether **25322-68-3**
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; crosslinked block graft copolymer as solid **electrolyte** containing liquid **electrolyte** for battery)

IT **96-48-0**, γ-Butyrolactone **25322-68-3**
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; crosslinked block graft copolymer as solid **electrolyte** containing liquid **electrolyte** for battery)

RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



L17 ANSWER 22 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:425357 HCAPLUS
DN 127:37159
TI Composite polymer solid electrolytes, their manufacture, and **nonaqueous** electrochemical device, especially lithium batteries
IN Minakata, Takashi; Ikeda, Masanori; Imauti, Toshio; Kuroki, Masakatsu
PA Asahi Kasei Kogyo Kabushiki Kaisha, Japan
SO PCT Int. Appl., 104 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9718596	A1	19970522	WO 1996-JP3363	19961115
	W: AU, CA, CN, FI, IL, JP, KR, MX, PL, RU, SG, US, VN				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2231384	AA	19970522	CA 1996-2231384	19961115
	CA 2231384	C	20020625		
	AU 9714322	A1	19970605	AU 1997-14322	19961115
	AU 703077	B2	19990311		
	EP 862232	A1	19980902	EP 1996-938484	19961115
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	CN 1198844	A	19981111	CN 1996-197348	19961115
	US 6284412	B1	20010904	US 1998-29823	19980309
PRAI	JP 1995-296517	A	19951115		
	WO 1996-JP3363	W	19961115		

AB The composite electrolytes have a polymer matrix containing cell walls defining closed cells, where the cells are filled with a **nonaq.** electrolyte by impregnation. The electrolytes are prepared by impregnating the polymer matrix with the electrolyte solution or electrodes containing the electrolytes. The electrochem. device, especially Li batteries, use the composite electrolyte. The electrolytes have high ionic conductivity and mech. strength.

IC ICM H01M006-18
ICS H01M010-40; H01M004-02; H01M004-04; H01B001-06; H01G009-038; C08L101-00

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST lithium battery polymer matrix composite electrolyte

IT Battery electrolytes
(compns. and manufacture of composite polymer solid electrolytes for secondary lithium batteries)

IT Battery electrodes
(electrodes containing composite polymer solid electrolytes for secondary lithium batteries)

IT Fluoropolymers, uses
Polyoxyalkylenes, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(solid electrolytes containing porous polymer matrix impregnated with **nonaq.** electrolyte solns. for secondary lithium batteries)

IT 7782-42-5, Graphite, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(anodes containing composite polymer solid electrolytes for batteries)

IT 811-97-2, HFC 134a
RL: NUU (Other use, unclassified); USES (Uses)
(blowing agent; in manufacture of solid electrolytes containing porous polymer matrix impregnated with **nonaq.** electrolyte solns. for secondary lithium batteries)

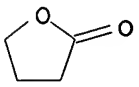
IT 12190-79-3, Cobalt lithium oxide (CoLiO2)
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(cathodes containing composite polymer solid electrolytes for batteries)

IT **96-48-0**, γ-Butyrolactone 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 9002-88-4, Polyethylene 9011-17-0, Hexafluoropropylene-vinylidene fluoride copolymer 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 24937-79-9, Poly(vinylidene fluoride) **25322-68-3**, Poly(ethylene oxide)

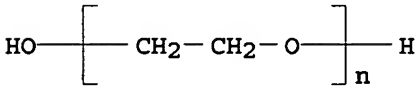
29298-45-1, Acetonitrile-styrene copolymer
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(solid **electrolytes** containing porous polymer matrix impregnated with **nonaq. electrolyte** solns. for secondary lithium batteries)

IT **96-48-0**, γ-Butyrolactone **25322-68-3**, Poly(ethylene oxide)
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(solid **electrolytes** containing porous polymer matrix impregnated with **nonaq. electrolyte** solns. for secondary lithium batteries)

RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



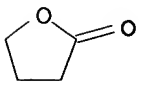
L17 ANSWER 23 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:287153 HCAPLUS
DN 126:345354
TI Photoelectrochemical cell of high conductivity
IN Shackle, Dale R.
PA Valence Technology, Inc., USA
SO U.S., 7 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 5622791	A	19970422	US 1995-519474	19950825
PRAI US 1995-519474		19950825		

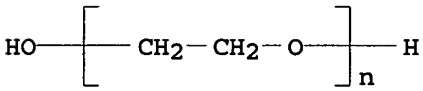
AB The cell comprises a current collector; a semiconductor secured to 1 side of the collector; a transparent single phase, solid solvent-containing electrolyte secured to the other side of the semiconductor; and a transparent electrode secured to the solid electrolyte on the side opposite from the semiconductor. The solid electrolyte comprises a redox LiI and I2 couple; a solid polymeric matrix, an inorg. ionic salt, and a **nonaq.** electrolytic solvent.

IC ICM H01M006-36
INCL 429111000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST photoelectrochem cell lithium iodide iodine
IT Polyurethanes, uses
RL: DEV (Device component use); USES (Uses)
(acrylates; in photoelectrochem.-cell electrolyte)
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(lithium complexes; in photoelectrochem.-cell electrolyte)
IT Photoelectrochemical cells
(with electrolyte formed from electrolytic solvent and inorg. ionic salt and polymeric matrix and redox couple)
IT 67-68-5, uses **96-48-0**, γ-Butyrolactone 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 109-99-9, THF, uses 110-71-4, Glyme 111-96-6, Diglyme 112-49-2, Triglyme 126-33-0, Sulfolane 143-24-8, Tetraglyme 646-06-0, Dioxolane 7439-93-2D, Lithium, polymer complexes, uses 7553-56-2, Iodine, uses 10377-51-2, Lithium iodide (LiI) **25322-68-3D**, lithium complexes
RL: DEV (Device component use); USES (Uses)
(in photoelectrochem.-cell **electrolyte**)
IT 190002-85-8P 190002-86-9P
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(in photoelectrochem.-cell electrolyte)
IT 50926-11-9, ITO
RL: DEV (Device component use); USES (Uses)
(photoelectrochem. cell with transparent electrode of)
IT **96-48-0**, γ-Butyrolactone **25322-68-3D**, lithium complexes
RL: DEV (Device component use); USES (Uses)
(in photoelectrochem.-cell **electrolyte**)
RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



L17 ANSWER 24 OF 24 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1993:564029 HCAPLUS
DN 119:164029
TI Secondary battery with solid electrolyte
IN Simon, Bernard; Boeuve, Jean Pierre
PA Alcatel Alsthom Compagnie Generale d'Electricite, Fr.
SO Eur. Pat. Appl., 4 pp.
CODEN: EPXXDW
DT Patent
LA French
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 517069	A1	19921209	EP 1992-108841	19920526
	EP 517069	B1	19960327		
	R: CH, DE, ES, FR, GB, IT, LI, NL, SE				
	FR 2677174	A1	19921204	FR 1991-6589	19910531
	FR 2677174	B1	19930806		
	ES 2084871	T3	19960516	ES 1992-108841	19920526
	US 5232795	A	19930803	US 1992-889234	19920528
	JP 05205778	A2	19930813	JP 1992-139408	19920529
PRAI	FR 1991-6589	A	19910531		

AB The battery has an electrolyte of a polymer containing a Li salt and a dipolar aprotic solvent, an anode of a Li-intercalatable carbonaceous material and the electrolyte, and a cathode of a material having a high redox potential, the electrolyte, and a conductive powder. The carbonaceous material is at least on the surface less crystalline than graphite and impermeable to solvent, while permitting the diffusion of Li. The carbonaceous material is selected from coke, graphitized carbon fibers, and pyrolytic C, and it contains a surface layer obtained by chemical vapor deposition using hydrocarbons or by carbonization of a polymer film. The salt anions are selected from AsF6-, BF4-, PF6-, CF3SO3-, ClO4-, BPh4-, N(CF3SO2)2, and SCN-; the **nonaq.** solvent is selected from ethylene carbonate, propylene carbonate, THF, etc.; and the polymer is selected from PEO, poly(propylene oxide) and ethylene oxide-propylene oxide copolymer. The cathode active material is selected from LiV2O5, LiCO2, and Li-doped polyaniline or polypyrrole. The stability of the invention button-type battery anode was demonstrated in >500 charge-discharge cycles.

IC ICM H01M010-40
ICS H01M004-58

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST battery anode carbonaceous material; anode lithium intercalatable carbonaceous material; polymer electrolyte carbonaceous material anode; salt lithium solvent polymer electrolyte; solvent polar salt polymer electrolyte

IT Battery electrolytes
(aprotic dipolar solvent-containing lithium salt-PEO or lithium salt-poly(propylene oxide) complexes)

IT Batteries, secondary
(lithium-intercalatable carbonaceous material, long cycle-life)

IT Carbonaceous materials
Coke
RL: USES (Uses)
(lithium-intercalatable, anodes, containing polymer electrolytes, for batteries)

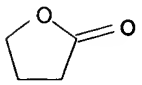
IT Solvents
(aprotic, dipolar, electrolytes from lithium salt-polymer complexes and, for batteries and battery anodes and cathodes)

IT Anodes
(battery, lithium-intercalatable carbonaceous materials, containing polymer electrolytes)

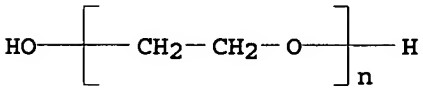
IT Carbon fibers, uses
RL: USES (Uses)
(graphite, lithium-intercalatable, anodes, containing polymer electrolytes, for batteries)

IT 7440-44-0 7782-42-5
RL: USES (Uses)
(carbon fibers, graphite, lithium-intercalatable, anodes, containing

polymer electrolytes, for batteries)
IT 12162-92-4, Lithium vanadium oxide (LiV2O5) 12190-79-3, Cobalt lithium oxide (liCoO2) 25233-30-1D, reduced, lithium-doped 30604-81-0D, Polypyrrole, reduced, lithium-doped
RL: USES (Uses)
(cathodes, containing polymer electrolytes, for batteries)
IT 67-68-5, DMSO, uses **96-48-0**, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 107-31-3, Methyl formate 108-32-7, Propylene carbonate 109-99-9, THF, uses 110-71-4, 1,2-Dimethoxyethane 126-33-0, Sulfolane 616-38-6, Dimethyl carbonate 616-42-2, Dimethyl sulfite 24991-55-7, Polyethyleneglycol dimethyl ether
RL: USES (Uses)
(**electrolytes** from lithium salt-polymer complexes and, for batteries and battery anodes and cathodes)
IT 7439-93-2D, Lithium, polymer complexes 9003-11-6D, Lithium complexes **25322-68-3D**, Polyethylene oxide, Lithium complexes 25322-69-4D, Polypropylene oxide, Lithium complexes
RL: USES (Uses)
(**electrolytes** from **nonaq.** aprotic dipolar solvents and, for batteries and battery anodes and cathodes)
IT **96-48-0**, γ-Butyrolactone
RL: USES (Uses)
(**electrolytes** from lithium salt-polymer complexes and, for batteries and battery anodes and cathodes)
RN 96-48-0 HCAPLUS
CN 2(3H)-Furanone, dihydro- (8CI, 9CI) (CA INDEX NAME)



IT **25322-68-3D**, Polyethylene oxide, Lithium complexes
RL: USES (Uses)
(**electrolytes** from **nonaq.** aprotic dipolar solvents and, for batteries and battery anodes and cathodes)
RN 25322-68-3 HCAPLUS
CN Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy- (9CI) (CA INDEX NAME)



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